

## Revision of the *Clivipollia* group (Gastropoda: Buccinidae: Pisaniinae) with description of two new genera and three new species

Koen FRAUSSEN

Leuvensestraat 25, B-3200 Aarschot, Belgium  
koen.fraussen@skynet.be

Peter STAHLSCHMIDT

Institute for Environmental Sciences, Universität Koblenz–Landau  
Fortstrasse 7, D-76829 Landau, Germany  
stahlschmidt@uni-landau.de

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**ABSTRACT.** The species placed in the heterogenous genus *Clivipollia* Iredale, 1929 are revised. Strong similarities in apertural morphology with *Falsilatirus* Emerson & Moffitt, 1988 are discussed and the genus is regarded as a sister genus of *Clivipollia*. Differences in protoconch morphology, apertural denticulation and sculpture serve to distinguish *Speccapollia* gen. nov. to harbour *Ricinula recurva* Reeve, 1846, a species commonly assigned to *Clivipollia* and *Clivipollia tokiae* Chino & Fraussen, 2015. *Engina* Gray, 1839 and *Enzinopsis* Iredale, 1940 are briefly discussed and compared to the new genus. The new genus *Minioniella* gen. nov. is described for *Minioniella heleneae* sp. nov. and compared to *Clivipollia* and *Enginella* Monterosato, 1917.

Three new species are added to the Indo-West Pacific fauna: *Clivipollia delicata* sp. nov. from Austral Islands (southern French Polynesia), *Speccapollia africana* sp. nov. from Mozambique and *Minioniella heleneae* sp. nov. from Moruroa (southern French Polynesia).

*Ricinula pulchrum* Reeve, 1846 is proposed as a nomen protectum in favor of *Turbinella elegans* Dunker in Küster, 1844. *Peristernia elegans* var. *papuaensis* Tapparone Canefri, 1879 from New Guinea is placed in synonymy with *Clivipollia pulchra* (Reeve, 1846). *Peristernia paulucciae* Tapparone Canefri, 1879 from East Africa is confirmed as a synonym of *Clivipollia incarnata* Deshayes in Laborde & Linant, 1830. *Turbinella wagneri* Anton, 1839 is excluded from the genus *Clivipollia* but no alternative is proposed, its placement being still uncertain. *Engina gigas* Landau & Vermeij, 2012, a fossil from the early Pliocene of the Dominican Republic, is transferred to *Clivipollia* based on protoconch morphology and sculpture, being the only record of *Clivipollia* known to us in the Atlantic.

### INTRODUCTION

The genus *Clivipollia* Iredale, 1929 comprises a number of beautiful and brightly coloured Buccinidae. It is one of the genera included in the *Engina* group within *Pisaniinae*. These pretty shells unfortunately have a small size that makes magnification needed to study important sculptural details. In combination with the often eye-catching pattern and colour, that distracts our attention, this has not contribute to a better understanding or to correct identifications in the past. Those species are still the cause of taxonomic confusion because only a limited number of species appear in scientific literature, mainly in faunal studies. A number of the species are rare or difficult to obtain and, consequently, little material has been available for comparative studies. The absence of an intact protoconch in most adult specimens has contributed to the difficulty in recognizing genera. We follow Vermeij (2006: 71-72) who organized the pisaniine Buccinidae into three main groups: *Pisania* group,

*Cantharus* group and *Engina* group. Buccinidae of the *Cantharus* group became well studied by Vermeij (2006) while the *Engina* group is in progress (Landau & Vermeij, 2012; Watters & Fraussen, 2015; Fraussen & Stahlschmidt, in preparation; ...).

The present paper is a review of the known species commonly placed in the genus *Clivipollia* and the related genus *Falsilatirus* Emerson & Moffitt, 1988, with brief notes about several other groups and species within the *Engina* group to discuss the matter in a broader context. We currently recognize four genera as related more closely to *Clivipollia* than to *Engina*, all of them characterized by the weak or absent parietal knob that, in combination with a weak anal knob, results in a weak or indistinct anal notch and by the apertural teeth inside the outer lip that are separated from the weak anal knob by a moderately broad gap or notch. While typical *Engina* are distributed along all tropical seas (including Atlantic and East Pacific), all living *Clivipollia* related species are, as far as we know, restricted to the Indo-West

Pacific. A single fossil species, *Clivipollia gigas* (Landau & Vermeij, 2012) comb. nov. from the early Pliocene of the Dominican Republic is the only Atlantic species known to us. Protoconch and apertural morphology serve to distinguish two of those genera as new: *Speccapollia* gen. nov. (type species *Ricinula recurva* Reeve, 1846) and *Minioniella* gen. nov. (type species: *Minioniella heleneae* sp. nov.). A new species from Austral Islands (southern French Polynesia) is compared to *Clivipollia pulchra* and added to the fauna of French Polynesia as *C. delicata* sp. nov. A new species from Mozambique is compared to *Speccapollia recurva* and *Engina phasolina* (Duclos, 1840) and added to the African fauna as *Speccapollia africana* sp. nov. A third species differs from all others and is added to the fauna of French Polynesia as *Minioniella* gen. nov. *heleneae* sp. nov.

The material studied in the present paper originates partly from the BENTHAUS expedition conducted by MNHN in deep-water along the Austral Archipelago and partly from a dedicated team of keen collectors collecting along the beaches of the numerous islands of French Polynesia and another team of mainly Portuguese collectors that are active in Mozambique.

#### Abbreviations

JL: collection Jean Letourneux, Tahiti, French Polynesia  
 JR: collection José Rosado, Mozambique  
 KF: collection Koen Fraussen, Belgium  
 KM: collection Kevin Monsecour, Belgium  
 MC: collection Mitsuo Chino, Japan  
 MHB: collection Michel & Hélène Boutet, Tahiti, French Polynesia  
 MNHN: Muséum national d'Histoire naturelle, Paris, France

MSNG: Museo Civico di Storia Naturale "Giacomo Doria", Genoa, Italy

NHMUK: Natural History Museum, London, United Kingdom

NHMW: Naturhistorisches Museum Wien, Vienna, Austria

NMB: Naturhistorisches Museum Basel, Switzerland

NSMT: National Science Museum Tokyo, Japan

PS: collection Peter Stahlschmidt, Germany

DW: Drague Warén (Warén dredge)

dd: empty shell, dead collected

lv: specimen collected alive

jv: juvenile or subadult specimen/shell

#### SYSTEMATICS

Family **BUCCINIDAE** Rafinesque, 1815

Subfamily **PISANIINAE** Gray, 1857

Genus *Clivipollia* Iredale, 1929

Figs 1A-B, 2A-B, 3A-K, 4A-L

*Clivipollia* Iredale, 1929: 347. Type species: *Clivipollia imperita* Iredale, 1929 (original designation) = *Ricinula pulchra* Reeve, 1846; Tropical Indo-West Pacific.

**Remarks.** *Clivipollia* species are characterized by a large protoconch, conical in shape, consisting of 3 ½ to 3 ¾ laterally flattened whorls, usually with a rough surface and often with a fine suprasutural cord. A sharp angulation between lateral side and the base of the protoconch whorls is occasionally detectable, appearing under the suture with the subsequent protoconch or teleoconch whorl. The transition to the teleoconch is usually distinct, marked by a sharp line.

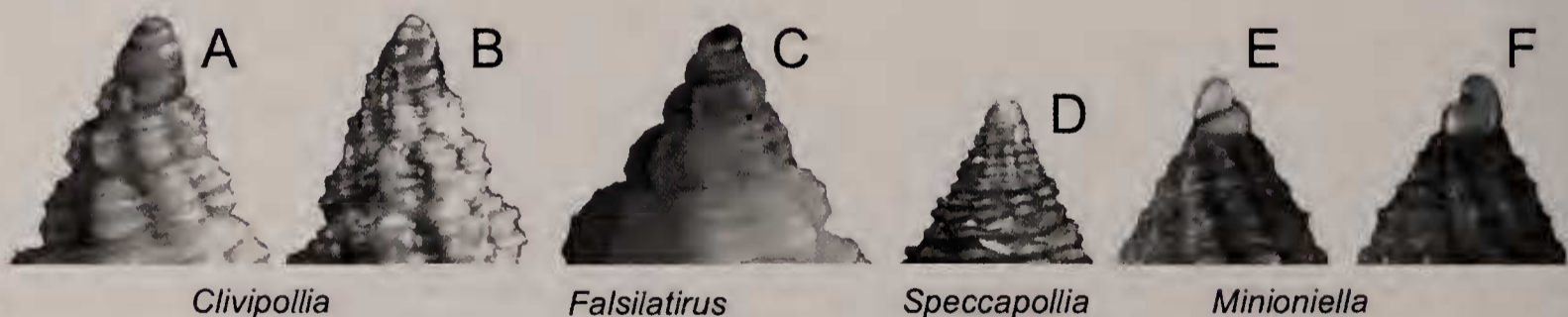


Fig. 1. Apex of *Clivipollia* group species.

**A.** *Clivipollia delicata* n. sp., holotype, 13.0 mm, Pacific, Austral Islands, Arago Bank, BENTHAUS, stn DW1968, 23°23'S, 150°44'W, 100-120 m, MNHN IM-2000-27908. **B.** *Clivipollia costata* (Pease, 1860), 12.9 mm juvenile, Japan, Ogasawara Islands, KF-3745. **C.** *Falsilatirus suduirauti* Bozzetti, 1995, 32.5 mm, Philippines, Bohol, off Balicasag in deep water, KF-4374. **D.** *Speccapollia recurva* (Reeve, 1846), 10.0 mm, Philippines, off Mactan Island, taken by lumun lumun nets, KM-22.17. **E-F.** *Minioniella heleneae* sp. nov., holotype, 6.7 mm, Pacific, French Polynesia, Tuamotu Islands, Moruroa Atoll, beach, MNHN IM-2000-32692, photo by Ph. Bacchet.

A second characteristic is the rather triangular shape of the narrow aperture, the parietal is gently curved, while the adapical part of the aperture with the transition to the outer lip is moderately flattened, forming a rather angular shape with the adapical part of the outer lip. The parietal knob is absent or at least inconspicuous, the anal knob is broad and low, resulting in a weak or absent anal notch. The outer lip is thick, with a sharp edge in fresh specimens, flared outwards, with a moderately narrow callus along the adapical part. The columella is straight, covered with knobs, the adapical one situated more adapically than the adapical knob on the outer lip. The outer apertural lip is rather straight, inside with usually 5 knobs, separated from the anal tooth by a moderately broad gap or notch, the adapical one being the biggest, gradually becoming smaller towards siphonal canal.

The aperture in *Clivipollia* is almost always smooth and glossy inside. Nevertheless we could detect a few atypical specimens (7 specimens among a hundred ones) with fine traces of internal lirae in *C. pulchra*, *C. incarnata* and *C. fragraria*. Those lirae are always obscure and almost undetectable to the naked eye, only feeling by moving a fine needle over the surface of the far inside of the aperture.

The colour of many *Clivipollia* species is bright orange, as seen in a number of *Peristernia* species (Fascioliidae) but not seen in typical *Engina*. Only *Engina mandarinoides*, *E. cronuchorda* and *E. notabilis*, all Fraussen & Chino, 2011, show an orange colour, but not as bright. Also one of the two *Falsilatirus* species, at least one *Speccapollia* species and the only known *Minioniella* species are bright orange too. The pattern usually consists of dark spiral lines (on top of the spiral cords or in the interspaces) on a vivid background. One species, *Clivipollia fragraria*, has broad spiral bands.

Species of *Falsilatirus* differ from *Clivipollia* in the much smaller protoconch, the convex columella that results in a more bended aperture, the fewer columellar knobs situated more abapically than the knobs inside of the outer lip, the finer spiral sculpture, the lower number of axial ribs and the larger adult size.

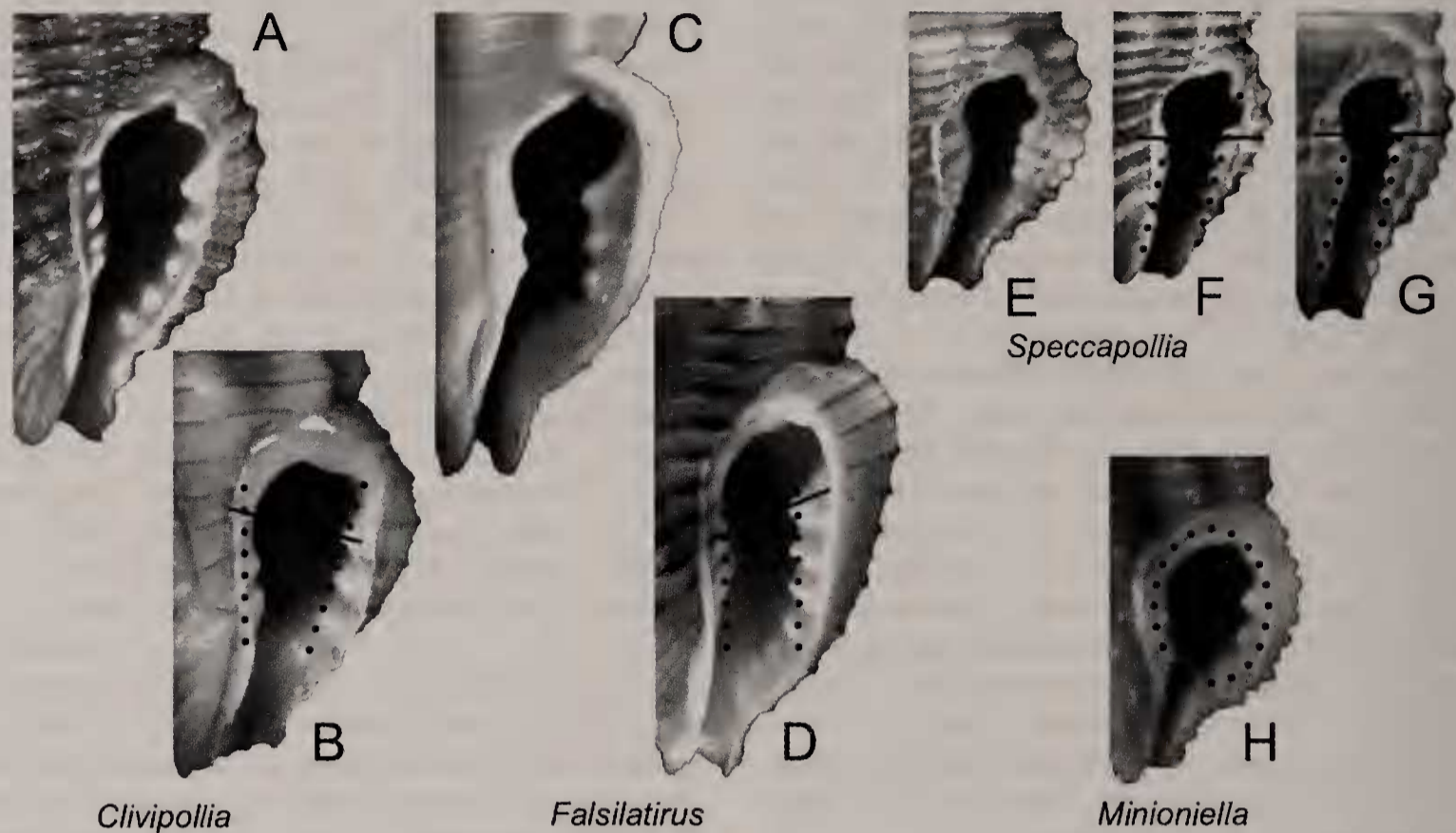
For differences with *Speccapollia* gen. nov. and *Minioniella* gen. nov. we refer to the comparison under that genus.

“*Engina*“ *astriata* (Reeve, 1846) differs from *Clivipollia* species in having a smaller protoconch, a sharp spiral cords with broad and rather smooth interspaces and a narrower aperture often with a small

parietal knob in fully adult specimens. The shape of the aperture and the presence or absence of a parietal denticle and the occasional presence of radially orientated lirae on the upper part of the parietal is subject to strong variation. This species is often placed in *Enzinopsis* Iredale, 1940 (type species *Engina gannita* Hedley, 1915 = *E. contracta* Reeve, 1846) but this genus differs by the presence of a parietal knob, a moderately broad columellar callus and a broader parietal with more obvious radially orientated lirae, broader spiral cords consisting of several finer secondary spiral cords and a higher spire. *Enzinopsis* is similar to *Engina* if not a synonym. Discussing *Engina* and related groups is beyond the scope of the present publication, pending further study we therefore tentatively keep this species in *Engina*.

Species of *Engina* Gray, 1839 [type species *Engina zonata* Gray, 1839: 112-113, by subsequent designation (Gray, 1847: 133) = *Engina turbinella* (Kiener, 1835)] differ from species of *Clivipollia* in having an usually smaller protoconch consisting of about 1 ½ to 3 whorls (rather than about 4) without subsutural angulation and by the apertural denticulation with a sharp anal knob, by the usually well developed parietal knob forming a distinctive anal notch and by the broad columellar callus with radially orientated lirae. The parietal denticle is absent in many specimens of *Engina turbinella*, the type species, however well present in many fully adult specimens. We therefore regard it as an important distinctive character in *Engina*. The broad columellar callus with radially orientated lirae is absent, or at least indistinct, in a number of Pacific *Engina* species, which also differ by a moderately slender shape. The spiral sculpture however is typical for *Engina*. The parietal denticle may be weak in those species, or absent if the specimen is not fully adult, but the anal notch is always well distinct and sufficient intermediate species are found to include them within the variability of the genus. We therefore keep both these morphotypes within *Engina*, knowing however that further study may prove that those slender species belong to a distinct genus, eventually *Enzinopsis*.

Species of *Pollia* Gray in Sowerby, 1834 (type species: *Buccinum undosum* Linnaeus, 1758) belong to the *Cantharus* group and differ from the species of *Clivipollia* in the presence of internal lirae inside the outer lip (Vermeij, 2006: 72, 85). For a discussion on the taxonomic position of *Pollia* we refer to Vermeij & Bouchet (1998: 472-473) and Vermeij (2006: 85-86, 89-91).



**Fig. 2.** Aperture of *Clivipollia* group species

**A.** *Clivipollia pulchra* (Reeve, 1846), 22.5 mm, Philippines, Bohol, Balicasag Island, in tangle nets, 150-180 m deep, KF-5409. **B.** *Clivipollia delicata* n. sp., holotype, 13.0 mm, Pacific, Austral Islands, Arago Bank, BENTHAUS, stn DW1968, 23°23'S, 150°44'W, 100-120 m, MNHN IM-2000-27908. **C.** *Falsilatirus suduiranti* Bozzetti, 1995, 32.5 mm, Philippines, Bohol, off Balicasag in deep water, KF-4374. **D.** *Falsilatirus pacifica* Emerson & Moffitt, 1988, 33.7 mm, French Polynesia, Tuamotu, Makemo Atoll, 100 m, JL, photo by Ph. Bacchet. **E.** *Speccapollia recurva* (Reeve, 1846), 8.5 mm, Philippines, Talikud Island, Davao, tangle nets, 30 m deep, MC. **F.** *Speccapollia tokiae* (Chino & Fraussen, 2015) comb. nov., holotype, 6.9 mm, Samoa, Vaisala-Savaii, dredged 10-20 m deep, on coral-sand, MNHN IM-2000-27916. **G.** *Speccapollia recurva* (Reeve, 1846), 10.0 mm, Philippines, off Mactan Island, taken by lumun lumun nets, KM-22.17. **H.** *Minioniella heleneae* sp. nov., holotype, 6.7 mm, Pacific, French Polynesia, Tuamotu Islands, Moruroa Atoll, beach, MNHN IM-2000-32692, photo by Ph. Bacchet.

#### Species included

*Clivipollia pulchra* (Reeve, 1846) – Indo-West Pacific – type species

= *Turbinella elegans* Dunker, in Küster & Kobelt, 1844 – nomen oblitum

= *Peristernia elegans* var. *papuaensis* Tapparone Canefri, 1879

= *Clivipollia imperita* Iredale, 1929

*Clivipollia costata* (Pease, 1860) – Hawaii

= *Peristernia thaannui* Pilsbry & Brian, 1918

*Clivipollia fragaria* (Wood, 1828) – Indo-West Pacific

= *Turbinella carolinae* Kiener, 1840

= *Ricinula bella* Reeve, 1846

*Clivipollia gigas* † (Landau & Vermeij, 2012) comb. nov. – Early Pliocene, Dominican Republic

*Clivipollia incarnata* (Deshayes in Laborde & Linant, 1830) – western Indian Ocean and Red Sea

= *Peristernia paulucciae* Tapparone Canefri, 1879

*Clivipollia delicata* sp. nov. – Austral Islands

#### Species excluded

*Engina cumingiana* Melvill, 1895 was placed in *Clivipollia* (as a subgenus of *Cantharus*) by Cernohorsky (1975: 207). The description by Melvill (1895: 226) is not unambiguous but the type figure (1895: pl. 14, fig. 13) shows a shell with a distinct anal notch.

*Turbinella wagneri* Anton, 1839 became placed in *Clivipollia* by Cernohorsky (1975: 205, as a subgenus of *Cantharus*) and by Singer & Mienis (1995: 25-26, as a subgenus of *Pollia*). The shape of the aperture looks much typical for the *Clivipollia* group species indeed, but the protoconch differs considerably from the genus *Clivipollia* in having well convex whorls with a moderately constricted suture, while the presence of internal lirae inside the outer lip suggests a placement in the *Cantharus* group. Pending further studies we keep *Turbinella wagneri* tentatively in the *Cantharus* group without assigning a proper genus. However often placed in *Pollia*, Vermeij (2006) did

not include this species in this genus. For a discussion on this group and the taxonomic position of *Polia* we refer to Vermeij & Bouchet (1998: 472-473) and Vermeij (2006: 85-86, 89-91).

***Clivipollia pulchra*** (Reeve, 1846) nomen protectum  
Figs 2A, 3A-C, 6A-D

*Turbinella elegans* Dunker, in Küster & Kobelt, 1844: 33; 1845: pl. 7, fig. 4, nomen oblitum.

*Ricinula pulchra* Reeve, 1846: pl. 3, fig. 20 a-b.

*Peristernia elegans* var. *papuaensis* Tapparone Canefri, 1879: 325.

*Clivipollia imperita* Iredale, 1929: 347, pl. 38, fig. 10.

*Ricinula pulchra* – Küster, 1860: pl. 4, fig. 3; 1862: 22.

*Engina papuensis* – Snyder & Callomon, 2010: 33, fig. 16a-c.

**Type locality.** *Ricinula pulchrum*: “Island of Capul, Philippines (on the reefs at low water); Cuming”; (Reeve, 1846: pl. 3 [2]); *Turbinella elegans*: unknown (Dunker in Küster & Kobelt, 1844: 33); var. *papuaensis*: “Port Dorey, Nouvelle-Guinée” (Tapparone Canefri, 1879: 325); *Clivipollia imperita*: Sydney Harbour (Iredale, 1929: 347).

**Type material.** *Turbinella elegans* Dunker, in Küster & Kobelt, 1844: not traced. *Ricinula pulchra* Reeve, 1846: syntypes in NHMUK 1980129, see also: <http://data.nhm.ac.uk/object/66f37d33-7465-4d8e-9edd-1d1368f982a4>; *Peristernia elegans* var. *papuaensis* Tapparone Canefri, 1879: one lectotype in MSNG, selected by Snyder & Callomon, 2010: 33, fig. 16a-c; *Clivipollia imperita* Iredale, 1929: not traced.

**Remarks.** It is quite remarkable that a species described by Dunker and well figured in the famous work by Küster became overlooked by almost all later taxonomists. Tapparone Canefri (1879: 324-325) listed *Ricinula pulchrum* as a synonym of *Turbinella elegans*. A second record known to us was published by Melvill & Sykes (1899: 221). We could not trace the record of *Peristernia elegans* in Museum Godeffroy as listed by Tapparone Canefri (1879: 324). We found no further records of *Turbinella elegans* (or *Peristernia elegans*) until the catalogue compiled by Snyder (2003: 89, 115, 312) where it is listed more correctly as belonging to *Engina*. A placement of *Clivipollia* species in *Engina* by recent authors brought additional complication for one who would detect the synonymy between *Ricinula pulchrum* and *Turbinella elegans* because the name published by Küster becomes, in that case, preoccupied by *Engina elegans* Gray 1839 (= *Engina turbinella* Kiener, 1836). *Clivipollia pulchra* is a well established name in recent literature and we therefore suggest to protect the name *Ricinula pulchrum* Reeve, 1846 as a nomen protectum according to ICZN 23.9 and 23.9.2 in favor

of the nomen oblitum *Turbinella elegans* Dunker in Küster, 1844.

*Clivipollia pulchra* is characterized by the bright orange colour ameliorated with darker, red-brown spiral lines inside the spiral interspaces. The species is therefore called “The Beautiful Ricinula” (Reeve, 1846: pl. 3).

Uniform yellow shells are well known from New Guinea and became described as var. *papuaensis*, but this colour form is also recorded from Vietnam, Indonesia and the Philippines. Shells with an uniform orange colour, thus without the brown spiral bands, occur occasionally within populations of normally coloured ones. The colour of the aperture is usually of a bright pink, occasionally white. Juveniles occasionally show a broad, pale band along the base below the sutural line.

*Clivipollia incarnata* looks much similar to *C. pulchra* at first glance but differs in the sharper spiral cords separated by broader interspaces with more secondary spiral cords, the brown spiral lines that are situated on top of the spiral cords (rather than in the spiral interspaces), the shorter siphonal canal and the slightly paler upper spire whorls.

*Peristernia schepmani* Dekkers, 2014 looks similar in pattern but differs by the protoconch consisting of 1 ½ whorls, the broader secondary spiral cords, the broader axial interspaces, the ornamentation inside the aperture that bears a parietal knob but has a much smoother outer lip, the absence of fine spiral cords on the tip of the siphonal canal, the slightly longer siphonal canal and the presence of fine internal lirae within the aperture. Both species lives at different depths (however some empty shells are recorded from deep water, see Dekkers, 2014: 37).

*Engina pulchra* (Reeve, 1846) from the eastern Pacific, described as *Buccinum pulchrum* in the same work (1846: pl. 11, fig. 80) is occasionally confused with *Clivipollia pulchra*, especially in checklists available on the web. The identical combination of specific name with authorship when both species are placed in *Engina* without mentioning the original combination has caused an unnecessary and confusing synonymy.

***Clivipollia incarnata***

(Deshayes in Laborde & Linant, 1834)

Figs 3F-H, 6G-L

*Turbinella incarnata* Deshayes, in Laborde & Linant, 1834: 66, pl. 65, fig. 20-22.

*Peristernia paulucciae* Tapparone Canefri, 1879: 325-327; 1880: 71-72, pl. 2, fig. 14-15.

*Engina incarnata* – Cernohorsky, 1971: 161; placed in *Clivipollia* by Cernohorsky, 1975: 205, but without new combination.

*Engina paulucciae* – Snyder & Callomon, 2010: 33, fig. 17a-b.

Cernohorsky (1975: 185, fig. 17) figured the syntype of *Ricinula astricta* and placed it under *Engina*

*incarnata*. Both are distinct species and belong to different genera. We exclude "*Engina*" *astricta* from *Clivipollia*. See also discussion about this species in the remarks under the genus *Clivipollia*.

**Type locality.** *Clivipollia incarnata*: Red Sea; *C. paulucciae*: in the original description recorded from Mauritius Island, "Ile Maurice" (Tapparone Canefri, 1879: 226) but the figured specimen is from Aden (Tapparone Canefri, 1880: 71).

**Type material.** *Turbinella incarnata* Deshayes, in Laborde & Linant, 1834: in MNHN-2000-30244; *Peristernia paulucciae* Tapparone Canefri, 1879: not traced (see Snyder & Callomon, 2010: 33).

**Range.** Known from the Red Sea, Aden, along the East African coast to Mauritius Island in the south and to Oman in the East. Records from the West Pacific belong to "*Engina*" *astricta*.

**Remarks.** *Clivipollia incarnata* is characterized by the spiral sculpture consisting of rather sharp cords ornamented with a dark brown spiral line on an orange-brown to reddish background.

*Clivipollia pulchra* looks much similar at first glance but differs by the broader spiral cords separated by narrower interspaces with fewer secondary spiral cords, by the brown spiral lines that are situated inside the spiral interspaces (rather than on top of the spiral cords), by the brighter orange colour, by the upper spire whorls that are slightly darker and the more stretched siphonal canal.

***Clivipollia costata*** (Pease, 1860)  
Figs 1B, 3I-K, 4L, 6G-H

*Engina costata* Pease, 1860: 142.

*Peristernia thaanumi* Pilsbry & Brian, 1918: 101, pl. 9, figs. 6-7.

*Cantharus (Clivipollia) costata* – Cernohorsky, 1975: 206-207.

*Clivipollia costata* – Kay, 1979; Moretzsohn & Kay, 1995: 9.

**Type locality.** *Engina costata*: Hawaii "Sandwich Islands" (Pease, 1860: 142); *Peristernia thaanumi*: off Waikiki, 35-50 fathoms and Honolulu Harbour, Hawaiian is. (Pilsbry & Brian, 1918: 101).

**Type material.** *Engina costata* Pease, 1860: holotype in NHM 1961163 (see also Cernohorsky, 1975: 206, fig. 69); *Peristernia thaanumi* Pilsbry & Brian, 1918: not traced.

**Range.** Known from Hawaii. A single sample (1 lv juv, 1 dd) from Osagawara Island, Japan was dived by Mr. Hiroshi Takashige (MC, KF).

**Remarks.** *Clivipollia costata* is characterized by the sharp spiral cords separated by broad interspaces, the moderately broad shaped shell in combination with a rather low number of axial ribs.

***Clivipollia fragaria*** (Wood, 1828)  
Figs 3D-E, 6M-P

*Engina fragaria* Wood, 1828: 11, pl. 3, fig. 27.

*Turbinella carolinae* Kiener, 1840: 47-48, pl. 18, fig. 4.

*Ricinula bella* Reeve, 1846: pl.3, fig. 15.

*Cantharus (Clivipollia) fragaria* – Cernohorsky, 1975: 205.

**Type locality.** *Clivipollia fragaria*: unknown; *Turbinella carolinae*: unknown; *Ricinula bella*: Island of Capul, Philippines (on the reefs at low water).

**Type material.** *Engina fragaria* Wood, 1828: not traced; *Turbinella carolinae* Kiener, 1840: not traced; *Ricinula bella* Reeve, 1846: syntypes in NHMUK 1980131, see also:  
<http://data.nhm.ac.uk/object/19a3f2ed-0afa-4158-ac92-43c7e268ffa5>.

**Figure 3A-O**

**A-C.** *Clivipollia pulchra* (Reeve, 1846). **A-B.** 22.5 mm, Philippines, Bohol, Balicasag Island, in tangle nets, 150-180 m deep, KF-5409. **C.** 19.8 mm, New Guinea, Manokwari, KF-0852.

**D-E.** *Clivipollia fragaria* (Wood, 1828). **D.** 16.2 mm, Guam, Orote Point, under dead coral, 10-12 m, KF-3274. **E.** 25.5 mm, Mozambique, Nacala Bay, KF-4874.

**F-H.** *Clivipollia incarnata* (Deshayes in Laborde & Linant, 1830). **F-G.** 24.9 mm, Red Sea, Eilat, on coral, 2 m, KF-2444. **H.** 21.6 mm, Red Sea, Eilat, on coral, 2-3 m, KF-5101.

**I-K.** *Clivipollia costata* (Pease, 1860). **I-J.** 21.2 mm, Hawaiian Islands, Oahu, Waimea Beach, Aligator Rock, under dead coral, 15-20 m, KF-5871. **K.** 15.9 mm, Japan, Ogasawara Islands, MC.

**L-M.** *Falsilatirus pacifica* Emerson & Moffitt, 1988, 33.7 mm, French Polynesia, Tuamotu, Makemo Atoll, 100 m, JL, photo by PH. Bacchet.

**N-O.** *Falsilatirus suduirauti* Bozzetti, 1995, 32.5 mm, Philippines, Bohol, off Balicasag in deep water, KF-4374.



**Range.** The species has a wide range, known from East Africa (Mozambique, Somalia, Red Sea) in the West to Polynesia in the East.

**Remarks.** *Clivipollia fragaria* is characterized by the slender shape, the peculiar pink colour with expressive pattern of dark bands with white or pale spot.

*Clivipollia gigas*

(Landau & Vermeij, 2012) comb. nov.

Figs 6E-F

*Engina gigas* † Landau & Vermeij, 2012: 124-125, fig. 8-13.

**Type locality.** Dominican Republic, Gurabo River, TU1215. Gurabo Formation, Early Pliocene.

**Type material.** Holotype in NMB H18437, 4 paratypes in NMB (H18438, H 18439, H18440, H18441), 1 paratype in NHMW.

**Range.** The species is known from the Early Miocene (Cercado Formation) to the Late Pliocene (Gurabo Formation) along the Gurabo River in the Dominican republic (Landau & Vermeij, 2012: 125).

**Remarks.** Landau & Vermeij (2012: 123, 124) correctly remarked that the spiral sculpture consisting of primary and secondary (and tertiary) cords may be more typical to *Engina* in a broad sense than to *Clivipollia*. The protoconch, however, is similar to *Clivipollia*. The apertural denticulation is more similar to *Clivipollia* as defined in the present paper and differs from *Engina* in having a narrow columellar and parietal callus, a weak or absent parietal denticle, a weak anal elevation or knob that is separated from the denticles inside the outer lip by a broad gap, a rather long siphonal canal, the fine and sharp primary spiral cords and a slightly larger adult size.

Assigning *Engina gigas* to *Clivipollia* has important biogeographical implications because it becomes the first, and until now the only, known *Clivipollia* species in the Atlantic Ocean.

*Clivipollia delicata* sp. nov.

Figs 1A, 2B, 4A-K

**Type material.** Holotype, 13.0 mm, Pacific, Austral Islands, Arago Bank, BENTHAUS, stn DW1968,

23°23'S, 150°44'W, 100-120 m, dd, juv, MNHN IM-2000-27908.

Paratype 1, 11.7 mm, Pacific, Austral Islands, Tubuai, BENTHAUS, stn DW1958, 23°20'S, 149°30'W, 80-150 m, dd, MNHN IM-2000-27909.

Paratype 2, 12.0 mm, Pacific, Austral Islands, Président Thiers Bank, BENTHAUS, stn DW1926, 24°38'S, 146°01'W, 80-90 m, dd, juv, KF-7337.

Paratype 3, 12.4 mm, Tuamotu Archipelago, Makemo Atoll, Arikitamiro, 45 m, dd, JL.

Paratype 4, 12.2 mm, Society Islands, Tahiti, Arue Fault, 60 m, dd, JL.

**Type locality.** Pacific, Austral Islands, Arago Bank, BENTHAUS, stn BENTHAUS, stn DW1968, 23°23'S, 150°44'W, 100-120 m.

**Material examined.** The type material listed above.

**Range.** At present only known from the type material listed above, all empty shells.

**Description.** Shell small, thin but solid; shape moderately broad with low, conical spire and slightly stretched base.

Tip of protoconch chipped, number of whorls according to traces 3 ½, remaining whorls 2 ¾ in number, smooth, glossy, last ¼ whorls with minute, irregular wrickled axial ribblets. Transition to teleoconch distinct, marked by sharp line and sudden appearance of teleoconch sculpture.

Teleoconch consisting of 5 ¼ weakly convex whorls. Shape biconical, with broad, fusiform spire, base weakly prolonged. Axial sculpture dominant. Colour pale orange-brown with pink apex; spiral cords with fine, darker spiral line; top of axial ribs slightly paler.

First teleoconch whorl with 2 fine primary spiral cords with broad interspace, 2 fine spiral threads on subsutural slope, fifth spiral cord partly concealed under suture of subsequent whorl. Interspaces gradually broader along second whorl with 1 or 2 fine secondary spiral threads. One spiral on subsutural slope growing bigger along third whorl, as strong as primary spiral cords on fourth whorl. Penultimate whorl with 3 primary spiral cords; interspaces broad with 7 secondary spiral cords, central one slightly stronger. Body whorl with 10 such primary spiral cords.

**Figure 4A-L**

**A-K.** *Clivipollia delicata* n. sp. **A-C.** Holotype, 13.0 mm, Pacific, Austral Islands, Arago Bank, BENTHAUS, stn DW1968, 23°23'S, 150°44'W, 100-120 m, MNHN IM-2000-27908. **D-E.** Paratype 1, 11.7 mm, Pacific, Austral Islands, Tubuai, BENTHAUS, stn DW1958, 23°20'S, 149°30'W, 80-150 m, MNHN IM-2000-27909. **F-G.** Paratype 3, 12.4 mm, Tuamotu Archipelago, Makemo Atoll, Arikitamiro, 45 m, JL, photo by P. Marti. **H-I.** Paratype 4, 12.2 mm, Society Islands, Tahiti, Arue Fault, 60 m, JL, photo by Ph. Bacchet. **J-K.** *Clivipollia delicata* n. sp., apex of holotype.

**L.** *Clivipollia costata* (Pease, 1860), 12.9 mm juvenile, Japan, Ogasawara Islands, KF-3745.





All spire whorls with 8 broad, well pronounced axial ribs; interspaces moderately narrow. Body whorl with 9 axial ribs.

Aperture typical for genus, narrow, semi-triangular, adapical border weakly flattened, abapical part towards siphonal canal slightly narrower. Outer lip thick; edge sharp, glossy, weakly curved outwards; with weak but broad anal knob separated by moderately broad adapical gap from other 4 internal knobs. Columella gently curved, typical for genus with smooth parietal; columella with 1 fine denticle and 2 slightly stronger columellar folds running deep into aperture. Callus thin, edge projecting. Siphonal canal moderately long, broad, open. Aperture and siphonal canal together slightly less than 1/2 of total shell length.

**Remarks.** *Clivipollia delicata* sp. nov. is characterized by the pale orange-brown colour with fine reddish brown spiral lines on top of spiral sculpture.

*Clivipollia pulchra* differs by the much broader primary spiral cords and narrower spiral interspaces, the bright orange colour and the darker spiral lines situated in the spiral interspaces.

*Clivipollia incarnata* differs by the slightly broader primary spiral cords, the slightly higher number of axial ribs and the whorls that increase in size faster, resulting in a larger size for shells with a same number of teleoconch whorls.

**Etymology.** *Clivipollia delicata* sp. nov. is derived from the Latin adjective *delicatus*, meaning "delightful, dainty", and refers to the magnificent, delicate sculpture on the shell that is much finer than most other known *Clivipollia* species.

Genus *Falsilatirus* Emerson & Moffitt, 1988  
Figs 1, 2, 3L-O, 5N-O

*Falsilatirus* Emerson & Moffitt, 1988: 43. Type

species: *Falsilatirus pacificus* Emerson & Moffitt, 1988: 43 (original designation); Central Pacific.

We agree with the assignment of *Falsilatirus* to the *Engina* group by Vermeij, 2001. A relationship between *Falsilatirus* and *Clivipollia* is discussed by Landau & Vermeij, 2012: 123.

#### Included species

*Falsilatirus pacificus* Emerson & Moffitt, 1988 – central West Pacific – Figs 2D, 3L-M

*Falsilatirus suduirauti* Bozzetti, 1995 – Philippines – Figs 1C, 2C, 3N-O, 5N-O

*Falsilatirus pacificus* Emerson & Moffitt, 1988: 43-44. Type locality: Off Arkana Reef, Northern Mariana Islands, 15°38.4'N, 142°46.2'E, 123-503 m, NOAA ship Townsend Cromwell, cruise TC 83-05, stn. 167, in shrimp traps.

*Falsilatirus suduirauti* Bozzetti, 1995: 27-28. Type locality: Balut, Mindanao Island, Philippines, 140-180 m.

**Remarks.** Species in *Falsilatirus* are characterized by their small protoconch in combination with a rather large adult size and by the shape and denticulation of the aperture. The protoconch consists of about 1 1/2 well convex whorls. The transition to the teleoconch is distinct, marked by the sudden presence of 3 spiral teleoconch cords. The parietal side of the aperture is flattened, the rectangular shape of the transition to the adapical part of the outer lip is accentuated by a weak anal notch; both the parietal and anal knobs are absent or weak. The outer lip is thick, with a sharp edge, flared outwards, rather narrow along the adapical part. The columella is weakly convex, covered with two columellar knobs, the adapical one situated more abapically than the adapical knob on the outer lip (Fig. 2D). Outer lip weakly concave, forming a moderately bended suboval aperture, inside with usually 2 big adapical knobs and a number of smaller abapical knobs (Fig. 2C-D).

#### Figure 5A-O

**A-D.** *Speccapollia africana* n. sp. **A-B.** Holotype, 10.0 mm, Mozambique, Nacala Bay, 3-5 m, MNHN IM-2000-3191. **C-D.** Paratype 1, 11.4 mm, same locality, KF-4879.

**E-F.** *Speccapollia tokiae* (Chino & Fraussen, 2015) comb. nov. **E.** Holotype, 6.9 mm, Samoa, Vaisala-Savaii, dredged 10-20 m deep, on coral-sand, MNHN IM-2000-27916. **F.** Paratype 1, 8.1 mm, same locality, MC.

**G.** *Speccapollia recurva* (Reeve, 1846), 8.5 mm, Philippines, Talikud Island, Davao, tangle nets, 30 m deep, MC.

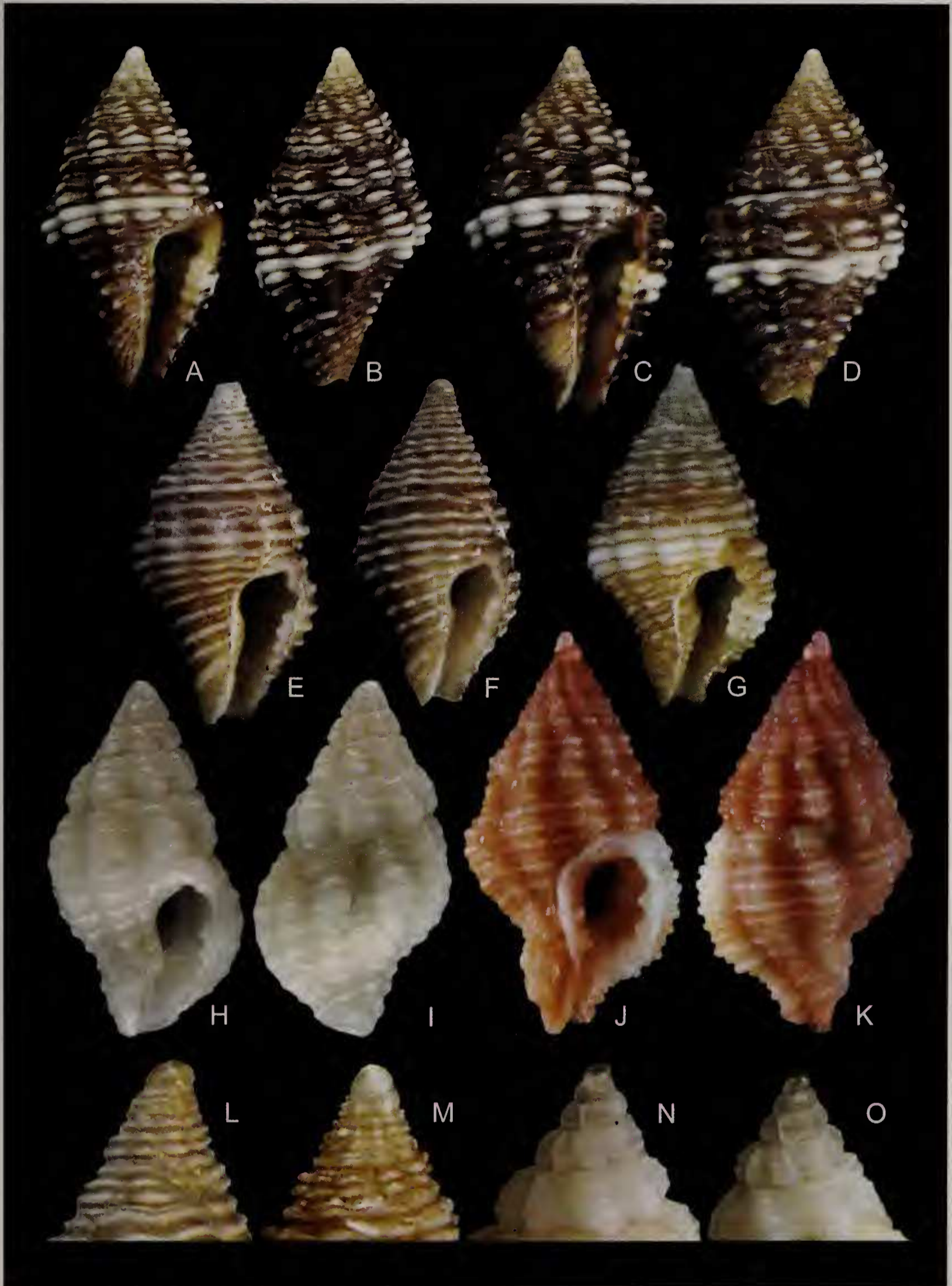
**H-I.** *Speccapollia* sp., 10.1 mm, French Polynesia, atoll de Takapoto Tuamotu, Okukina, beach, MB.

**J-K.** *Minioniella heleneae* sp. nov., holotype, 6.7 mm, Pacific, French Polynesia, Tuamotu Islands, Moruroa Atoll, beach, MNHN IM-2000-32692, photo by Ph. Bacchet.

**L.** *Speccapollia tokiae*, Samoa, Vaisala-Savaii, dredged 10-20 m deep, on coral-sand, apex of paratype 2, 8.4 mm, collection KF-3744.

**M.** *Speccapollia recurva* (Reeve, 1846), 10.0 mm, Philippines, off Mactan Island, taken by lumun lumun nets, KM-22.17.

**N-O.** *Falsilatirus suduirauti*, Bozzetti, 1995, 32.5 mm, Philippines, Bohol, off Balicasag in deep water, KF-4374.



Species in *Clivipollia* differs by the larger protoconch, the more triangular shaped aperture with moderately straight sides, the presence of a broad but weak anal knob, the columellar knobs that are situated more adapically than the knobs inside the outer lip (Fig. 2B), the absence of a gap in between the adapical and abapical apertural knobs inside the outer lip (Fig. 2A-B), the finer spiral sculpture with fine and sharp primary spiral cords and the larger adult size.

Genus *Speccapollia* gen. nov.  
Figs 1D, 2E-G, 5A-I, 5L-M

**Type species.** *Ricinula recurva* Reeve, 1846, here designated (Figs 1D, 2E, 2G, 5G, 5M, 6S) from French Polynesia in the east, the Philippines and Japan in the north, to eastern Indonesia in the west.

**Diagnosis.** Shell small, shape broad with short, conical spire, base broad. Colour usually yellowish, orange or brown with fine or broad spiral lines or dots on top of the spiral sculpture.

Protoconch small, consisting of 1 ¼ to 2 whorls. Transition to teleoconch indistinct or marked by fine line followed by teleoconch sculpture.

Teleoconch consisting of 4 to 5 ¾ whorls, upper spire whorls weakly flattened. Axial sculpture dominant. All spire whorls with 3 or 4 rather broad spiral cords with smooth top; interspaces moderately narrow along apex, gradually growing broader along later whorls. Secondary spiral cords absent or obscure along spire whorls but present in interspaces along last whorl.

Aperture narrow, adapical part semi-oval, columella running parallel with outer lip, abapical part growing narrower. Obscure internal lirae present inside the outer lip, running from behind outer lip to far inside aperture. Columella gently curved, usually with 2 to 4 columellar folds or knobs, callus rather narrow. Parietal smooth, callus narrow, parietal knob weak or obscure, parietal denticle absent or obscure. Anal notch weak, anal knob big, without denticle. Outer lip thick; edge sharp, glossy; anal knob separated by moderately broad adapical notch from 3 or 4, rarely 5, internal knobs. Adapical columellar knob situated in front of adapical knob at outer lip (Fig. 2F-G). Siphonal canal short, broad, open, bended towards dorsal side.

**Remarks.** *Speccapollia* gen. nov. is characterized by the small protoconch consisting of 1 ¼ to 2 whorls, by the absence of a parietal knob in combination with the absence of a broad columellar and parietal callus, by the low number of knobs on both the columella and outer lip, knobs of which the adapical ones are situated in front of each other, by the presence of obscure internal lirae inside the outer lip, the spiral sculpture consisting of a moderately big primary spiral cords with rather broad interspaces with secondary spiral cords absent on the spire whorls but present on the last whorl. Species of *Clivipollia* differ from

species of *Speccapollia* gen. nov. in having a larger and papilliform protoconch consisting of 3 or 4 whorls, a more triangular shaped aperture, a rather narrow anal notch with a rather well developed anal knob that is situated more adapically inside of the aperture, an usually larger number of apertural knobs both on the columella and inside of the outer lip, a columellar knobs situated more adapically than the knobs inside of the outer lip, a narrow parietal callus, a sculpture that consists of broader spiral cords with narrower adapical spiral interspace and a larger adult size.

Species of *Falsilatirus* differ from species of *Speccapollia* gen. nov. in having a broader, more triangular shaped aperture with curved sides, a broader anal notch without parietal or anal denticle, a columellar knobs situated more abapically than the knobs inside of the outer lip, a narrow parietal callus, a sharper spiral sculpture and a much larger adult size.

"*Engina*" *stricta* (Reeve, 1846) differs from *Speccapollia* gen. nov. in having broader spiral interspaces and a more *Engina*-like aperture usually with a parietal knob in well adult specimens and a callus with radially orientated lirae. For a brief discussion about the generic placement of this species we refer to the comparison under *Clivipollia*.

Species belonging to *Engina* differ from *Speccapollia* gen. nov. in having a broad columellar callus running along the whole columella and parietal to the adapical part of the aperture, sculptured with radially orientated lirae that are usually well distinct in typical specimens; in having a distinct, usually equally sized, parietal and anal denticle forming a deep and narrow anal notch; a larger number of knobs on both columella and outer lip, with a narrower adapical notch inside the outer lip and in having spiral cords consisting of several sharp spiral keels rather than consisting of a single big cord with smooth, rounded top.

Virtually all typical *Engina* species have a sharp parietal knob forming a well defined anal notch. The type species, *Engina turbinella*, however, has a moderately small similar parietal denticle that is usually absent in not fully adult specimens. The radially orientated lirae are present on the parietal callus of most *Engina* species, but not all (Landau & Vermeij, 2012: 122), and are occasionally found in specimens of *Speccapollia recurva*.

Many Pacific species belonging, or assigned, to *Engina* or *Enzinopsis* differ in the multispiral, rather papilliform protoconch; the usually slender shape with higher spire; the presence of a number of lirae on the parietal part of the columella in fully adult specimens; the usually narrow anal notch bordered by moderately developed knobs and the narrower adapical notch inside the outer lip.

Species of *Pollia* Gray in Sowerby, 1834 (type species: *Buccinum undosum* Linnaeus, 1758) belong to the *Cantharus* group and are characterized by the presence of internal lirae inside the outer lip (Vermeij,

2006: 72, 85). The inside of the outer lip in *Clivipollia* is almost always smooth and glossy (see remarks under *Clivipollia* for a few exceptions). Also *Speccapollia* gen. nov. has fine traces of internal lirae inside the outer lip, but those are much finer than in *Pollia* and obscure.

For a discussion on the taxonomic position of *Pollia* we refer to Vermeij & Bouchet (1998: 472-473) and Vermeij, (2006: 85-86, 89-91).

Species belonging to *Morula* Schumacher, 1817 (Muricidae) differ in having a more strongly ovate aperture with two strong denticles within the outer apertural lip and in having most of the time a conical, multispiral protoconch.

**Etymology.** *Speccapollia* is derived from the Old English *specca*, meaning “a speck, a small spot, stain”, or as in the Old Dutch expression *speckel* meaning “speckle, to sprinkle”, referring to the small size of the species; in combination with *-pollia*, meaning “a small *Pollia*” or “a small *Clivipollia*”.

#### Included species

*Speccapollia recurva* (Reeve, 1846) comb. nov. – West Pacific and Indonesia – type species

*Speccapollia tokiae* (Chino & Fraussen, 2015) comb. nov. – Samoa

*Speccapollia africana* sp. nov. – Mozambique

*Speccapollia* species – Austral Islands

*Speccapollia recurva* (Reeve, 1846) comb. nov.  
Figs 1D, 2E, 2G, 5G, 5M, 6S

*Ricinula recurva* Reeve, 1846: pl. 6, fig. 53.

*Cantharus (Clivipollia) recurva* – Cernohorsky, 1975: 205, fig. 67-68.

**Type locality.** “Lord Hood’s Island” = southern Marurea Island, SE end of Tuamotu Archipelago.

**Type material.** Two syntypes in NHMUK 1968465 (see also Cernohorsky, 1975: 205, fig. 67-68).

**Range.** Known from French Polynesia in the east, the Philippines and Japan in the north, to eastern Indonesia in the west.

**Remarks.** *Speccapollia recurva* is characterized by the small adult size, the broad shape, the broad spiral cords separated by narrow interspaces with a single secondary spiral cord and the pale brownish colour with white dots on top of the sculpture.

*Speccapollia tokiae* differs from *Speccapollia recurva* in having a narrow spiral cords separated by broader interspaces, by the usually darker colour and by the absence of a paler spiral band along the body whorl.

For differences with *Speccapollia africana* sp. nov. we refer to the comparison under that species.

#### *Speccapollia tokiae*

(Chino & Fraussen, 2015) comb. nov.

Figs 2F, 5E-F, 5L

*Clivipollia tokiae* Chino & Fraussen, 2015: 108-109, figs 1-8.

**Material examined.** The holotype and both paratypes are the only specimens known to us.

**Type locality.** Pacific, Samoa, Vaisala-Savaii, dredged 10-20 m deep, on coral-sand, 1988.

**Type material.** Holotype in MNHN IM-2000-27916. Paratype 1 in MC. Paratype 2 in KF-3744.

**Range.** At present only known from the type locality.

**Comparison.** *Speccapollia tokiae* is characterized by the orange-brown colour with fine white or yellowish spiral lines on top of the spiral cords.

*Speccapollia recurva* differs by the broader spiral cords separated by narrower interspaces, the usually paler colour and the presence of a white or pale spiral band along the body whorl.

For differences with *Speccapollia africana* sp. nov. we refer to the comparison under that species.

#### *Speccapollia africana* sp. nov.

Figs 5A-D

**Type material.** Holotype, 10.0 mm, Mozambique, Nacala Bay, 3-5 m, MNHN IM-2000-31691.

Paratypes 1-5, 8.5-11.4 mm, same locality, KF-4879.

Paratype 6, 9.9 mm, Mozambique, Mozambique Island, 3-4 m, JR.

Paratypes 7-9, 8.9-9.2 mm, Mozambique, Praia do Wimbe, Pemba, 2-3 m, JR.

Paratype 10, 10.2 mm, Mozambique, Fernão Veloso Bay, Melala, 2-4 m, JR.

**Type locality.** East Africa, Mozambique, Nacala Bay, 3-5 m.

**Material examined.** The type material listed above.

**Range.** At present only known from northern Mozambique.

**Description.** Shell small, thick, solid; shape broad with low, conical spire and broad base.

Protoconch with 1 <sup>2</sup>/<sub>3</sub> convex, smooth whorls; yellowish. Transition to teleoconch indistinct, marked by sudden appearance of teleoconch sculpture.

Teleoconch consisting of 5 <sup>3</sup>/<sub>4</sub> weakly convex whorls, upper spire whorls slightly flattened. Axial sculpture dominant but obscured by spiral band. Colour reddish brown with white dots on top of axial sculpture, dots on base smaller, periphery with continuous white spiral band on top of spiral cord.

All spire whorls with 3 fine primary spiral cords; interspaces narrow on first whorl, gradually growing broader, along second and third whorls with a single fine secondary spiral thread. This fine secondary thread growing stronger along penultimate whorl. Body whorl with 11 or 12 primary spiral cords, interspaces broad with 1 to 3 secondary spiral cords, adapical interspace broader; spiral interspaces on siphonal canal broad but usually smooth without secondary spiral cords.

All spire whorls with 9 or 10 broad axial ribs, interspaces narrow. Body whorl with 9 such axial ribs. Aperture typical for genus, adapically part semi-oval, abapical part towards siphonal canal narrower. Outer lip thick; edge sharp, glossy; anal denticle separated by moderately broad adapical notch from 4 (holotype) or 5 (paratype) internal knobs. Obscure internal lirae present inside the outer lip, running from behind outer lip to far inside aperture. Columella gently curved, parietal smooth with narrow callus; columella with 2 (holotype) to 4 (paratype) columellar folds. Parietal smooth, callus narrow, parietal knob weak with obscure, almost invisible parietal denticle. Anal notch weak, anal knob big, without denticle. Siphonal canal short, broad, open, curved towards dorsum. Aperture and siphonal canal together slightly more than 1/2 of total shell length.

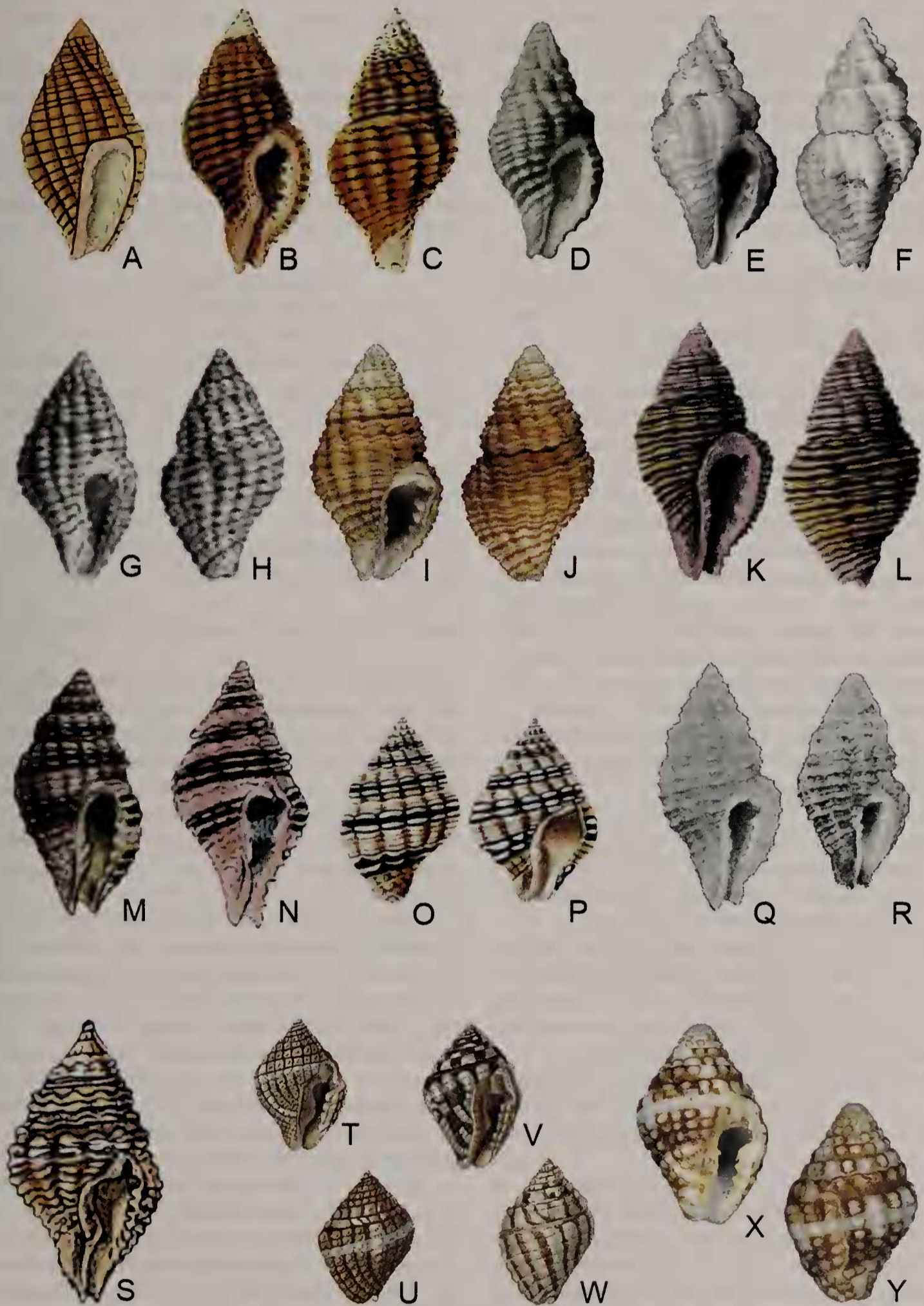
**Remarks.** *Speccapollia africana* sp. nov. is characterized by the rather smooth upper section of the aperture; the few secondary spiral cords and the rather dark colour with snow-white dots on top of the axial ribs and the presence of a narrow, white spiral band along the periphery.

*Speccapollia recurva* differs from *S. africana* sp. nov. in the number of secondary spiral cords and their strength: up to 5 in the adapical spiral interspace and 3 in the other interspaces that are slightly finer (while *S. africana* sp. nov. only has 3 secondary spiral cords in the adapical spiral interspace, a single or occasionally 3 in the other interspaces on the last whorl and usually smooth interspaces on the siphonal canal); in having a slightly broader aperture with slightly shorter siphonal canal; a weakly narrower callus near the anal notch; a weak but still stronger parietal knob; the presence of a weak anal knob; and the paler colour with a broader white spiral band along the periphery of the last whorl. *Speccapollia tokiae* differs from *S. africana* sp. nov. in having narrow spiral cords separated by broader interspaces, an usually paler colour with fine white spiral lines on top of the spiral sculpture and by the absence of a paler spiral band along the body whorl. *Engina phasinola* (Duclos, 1840) differs from *S. africana* in the slightly broader shape, the deeper and broader subsutural concavity, the slightly broader callus along the parietal part of the columella, the presence of a weak parietal denticle and an anal knob, and the stronger apertural denticles inside the outer lip (Figs 6T-Y).

**Etymology.** *Speccapollia africana* sp. nov. is named after the African continent where the species is the only member of the genus, as far as we know today. The combination with the generic name conjures up a strong contrast between the minute size of this species and the vast continent.

## Figure 6A-Y

**A.** Type figure of *Turbinella elegans* Dunker in Küster & Kobelt, 1844, taken from Küster & Kobelt, 1845: pl. 7, fig. 4. **B-C.** Type figure of *Ricinula pulchra* Reeve, 1846: pl. 3, fig. 20 a-b. **D.** Type figure of *Clivipollia inperita* Iredale, 1929: pl. 38, fig. 10. **E-F.** Holotype of *Engina gigas* Landau & Vermeij, 2012, from Landau & Vermeij, 2012: fig. 8-13. **G-H.** Type figure of *Turbinella incarnata* Deshayes, in Laborde & Linant, 1834: pl. 65, fig. 20-22. **I-J.** Syntype of *Turbinella incarnata* Deshayes, in Laborde & Linant, 1834, 21.8 mm, MNHN-IM-2000-30244, image courtesy of MNHN and Manuel Caballer MNHN, Project E-RECOLNAT: ANR-11-INBS-0004. **K-L.** Type figure of *Peristernia paulucciae* Tapparone Canefri, 1879, from Tapparone Canefri, 1880: pl. 2, fig. 14-15. **M.** Type figure of *Engina fragaria* Wood, 1828: 11, pl. 3, fig. 27. **N.** Type figure of *Ricinula bella* Reeve, 1846: pl. 3, fig. 15. **O-P.** Type figure of *Turbinella carolinae* Kiener, 1840: pl. 18, fig. 4. **Q-R.** Type figures of *Peristernia thaanumi* Pilsbry & Brian, 1918: pl. 9, figs. 6-7. **S.** Type figure of *Ricinula recurva* Reeve, 1846: pl. 6, fig. 53. **T-W.** Type figures of *Columbella phasinola* Duclos, 1840: pl. 8, fig. 13-16. **X-Y.** Syntype of *Columbella phasinola* (one of three syntypes), 12.8 mm, MNHN-IM-2000-6405, photo courtesy of MNHN and Manuel Caballer MNHN, Project E-RECOLNAT: ANR-11-INBS-0004.



*Speccapollia* species  
Figs 5H-I

A specimen from Okukina, Takapoto Atoll, Tuamotu and a second from Motu Roa, at Rangiroa Atoll, Tuamotu, both collected by H el ene Boutet at the beach, are strongly eroded but are still possessing the apertural characteristics of *Speccapollia* gen. nov. The protoconch, however, is not suitable for description or comparative study. We therefore do not describe this species.

Genus *Minioniella* gen. nov.  
Figs 1E-F, 2H, 5J-K

**Type species.** *Minioniella heleneae* sp. nov., here designated (Figs 1E-F, 2H, 5J-K), from French Polynesia, Tuamotu Islands, Moruroa Atoll.

**Diagnosis.** Shell small, shape biconical, moderately broad with low, conical spire; base constricted with weakly stretched base. Protoconch high, consisting of 1 1/2 laterally flattened whorls that are typical for genus. Transition to teleoconch distinct, marked by fine line. Shell ornamented with dominant axial ribs crossed by fine spiral cords, interspaces covered with fine but sharp incremental lines. Aperture rather oval, columella weakly concave, parietal concave, anal notch broad but shallow, parietal knob absent or weak, anal knob weak, the whole forming a smooth running curve along columella and adapical part of aperture. Columella with a single columellar knob, on transition to siphonal canal with 2 small columellar folds. Outer lip concave; inside with knobs. Siphonal canal short, straight, open, narrow.

**Remarks.** *Minioniella* gen. nov. is characterized by a peculiar protoconch morphology with a high shape, consisting of angular whorls and by the semi-oval aperture with a limited number of denticles.

Species of *Clivipollia* differ by the larger protoconch, the narrower, more triangular shaped aperture, the presence of a broad but weak anal knob, the larger number of apertural knobs both on the columella and inside the outer lip and the larger adult size.

Species of *Speccapollia* gen. nov. differ in having a narrow aperture, a deep anal notch, a broad parietal callus and a sculpture that consists of broader spiral cords.

*Enginella* Monterosato, 1917 [type species: *Murex bicolor* Cantraine, 1835 = *E. leucozona* (Philippi, 1844)] has a protoconch with somewhat similar shaped, moderately angulated whorls but differs considerably in shape and pattern. The aperture differs in the well defined anal notch with sharp parietal and anal denticles. The Indo-West Pacific species placed in this genus by Cernohorsky (1975: 201) belong to *Engina* or *Enginella*, thus far this genus is not recorded from the Indo-West Pacific. Species belonging to *Morula* Schumacher, 1817 (Muricidae)

could be confused with *Minionella* but they constantly differ in having a narrower and more strongly ovate aperture with strong denticles within the outer apertural lip and in having most of the time a conical, multispiral protoconch attesting of a planktotrophic larval development.

**Etymology.** *Minioniella* is derived from the English *minion* (neuter), in French *mignon*, meaning "a favorite, a darling" or when used as an adjective meaning "pretty, favorite, attractive, gracious, ...", referring to the pretty shape and colour of this shell, with the diminutive suffix *ella* (Latin) to evocate the small size.

*Minioniella heleneae* sp. nov.  
Figs 1E-F, 2H, 5J-K

**Type material.** Holotype, 6.7 mm, Pacific, French Polynesia, Tuamotu Islands, Moruroa Atoll, beach, MNHN IM-2000-31692.

**Type locality.** Pacific, French Polynesia, Tuamotu Islands, Moruroa Atoll, beach.

**Material examined.** The holotype is the only known specimen, leg. H el ene Boutet.

**Range.** At present only known from the holotype.

**Description.** Shell small, thin but solid; shape biconical, moderately broad with low, conical spire; base constricted with weakly stretched base.

Protoconch high, consisting of 1 1/2 laterally flattened whorls with sharp angulation forming broad, flat subsutural platform; tip rather papilliform, first whorl high, last 1/2 whorl about 3/5 times narrower than first whorl. Transition to teleoconch distinct, marked by fine line.

Teleoconch consisting of 4 1/4 whorls, laterally flattened on spire, ornamented with dominant axial ribs crossed by fine spiral cords, interspaces covered by fine but sharp incremental lines. First whorl with 2 fine, sharp spiral cords, interspaces broad, a third spiral cord partly concealed under suture of subsequent whorl. Second whorl with 3 primary spiral cords, a fine secondary spiral cord appearing in middle of adapical interspace. This secondary spiral cord gradually increasing in strength, on third whorl almost as strong as primary spiral cords. Penultimate whorl with 4 primary spiral cords, interspaces broad with a fine, obscure secondary spiral cord. Body whorl with 18 spiral cords of different strength, interspaces broad. All spire whorls with 12 sharp, pronounced axial ribs, interspaces twice as broad. Body whorl with 10 axial ribs, including broad labral varix.

Aperture semi-oval, columella weakly concave, parietal concave, parietal knob absent or weak, anal notch broad but weak, anal knob weak, the whole forming a smooth running curve along columella and



adapical part of aperture. Columella with a single columellar knob, on transition to siphonal canal with 2 small columellar folds. Outer lip concave; inside with 4 knobs, adapical one largest, sharp, gradually becoming smaller towards siphonal canal. Siphonal canal short, straight, open, narrow

**Remarks.** *Minioniella heleneae* sp. nov. is characterized by the angular protoconch whorls, the dominant axial sculpture in combination with moderately fine spiral cords, the fine but sharp axial incremental lines, the round aperture looking not unfamiliar for Muricidae with few denticles only, the orange colour with pinkish upper spire and the small size.

**Etymology.** *Minioniella heleneae* sp. nov. is named in honour of Hélène Boutet for her interest in shells and the discovery of several new species.

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